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GSFC's Earth Sciences (GES)  
Distributed Active Archive Center (DAAC)  
Operations Readiness: L1 Production, Archive,  
Distribution, and User Services

Presentation to MODIS Science Team

November 16, 1999

Steve Kempler

GES DAAC Manager

301-614-5765

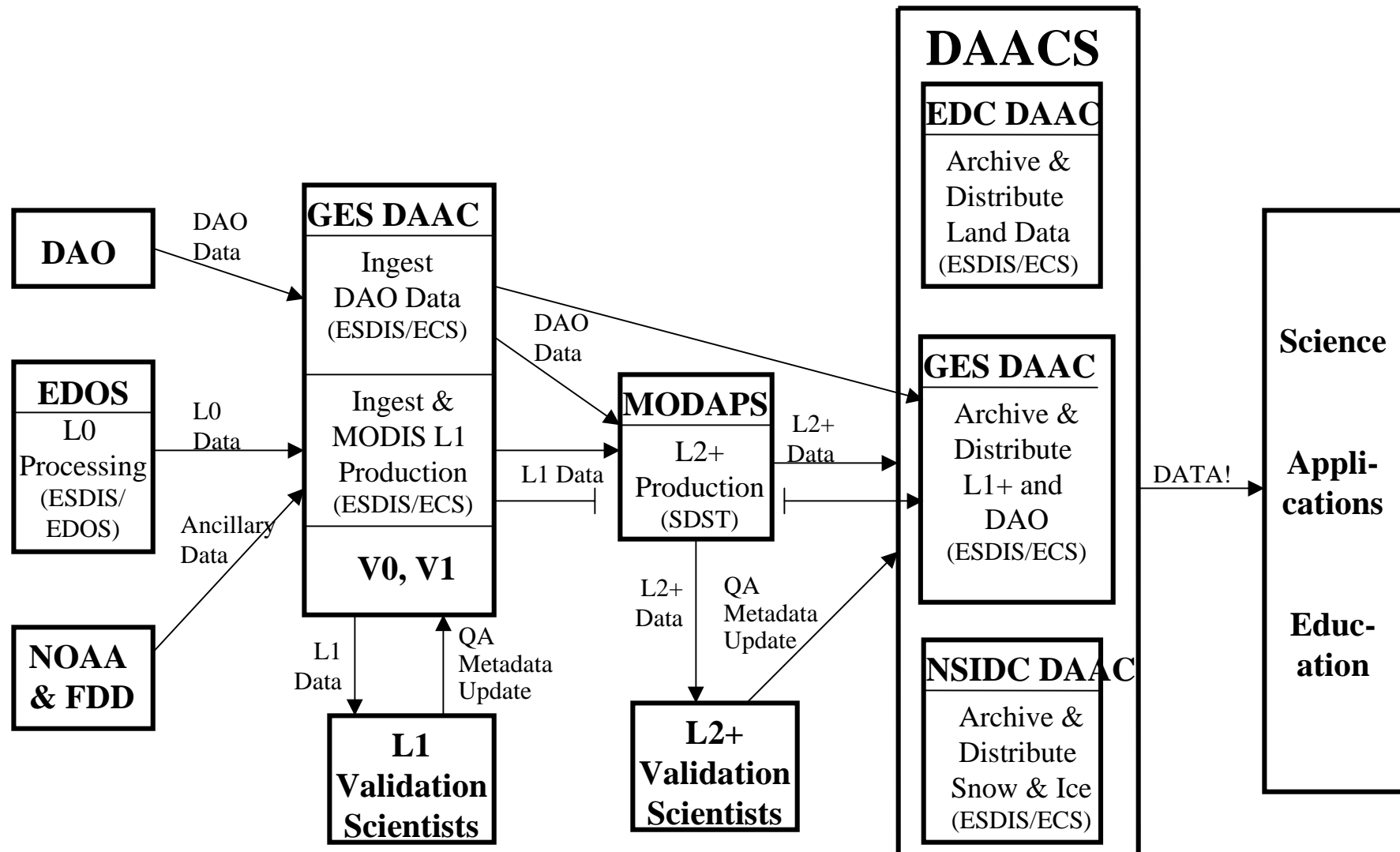
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<http://daac.gsfc.nasa.gov>

# At Launch MODIS Data Flow

(Development Team in parenthesis)

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# DAAC Readiness - Mission Critical Scenarios

GDAAC Mission Critical Scenarios	11/10/99	(Receipt of First Data) 12/23/1999	(First Public Access) 3/3/2000	11/10/99	(Receipt of First Data) 12/23/1999	(First Public Access) 3/3/2000	Comments
	Functionality			Performance			
<b>Ingest to Archive</b>							
MODIS L0, MODIS & ASTER EDSs	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	
NOAA Ancillary, NISE, S/C OA & HK	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	
<b>Production</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
DPREP through MODIS PGE-03	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	
Science QA of MODIS L1	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	
Science Software Integration & Test	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	
<b>Distribution</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Distribute MODIS Data to MCST (subscription service)	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	
Distribute ASTER EDSs to ASTER GDS	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	
Distribute MODIS L1 Products to MODIS SCFs	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

All Scenarios Demonstrated in Ops Mode at DAAC
Minor Problems - NCRs & Percent Scenarios impacted
Major Problems - NCRs & Percent Scenarios impacted
Not Checked Yet; % Complete Unknown Until After Testing Begins

# DAAC Readiness - Mission Essential Scenarios

GDAAC Mission Essential Scenarios	11/10/99	(Receipt of L2 Data) 4/3/2000	(Public Access to L2) 6/3/2000		11/10/99	(Receipt of L2 Data) 4/3/2000	(Public Access to L2) 6/3/2000	NCRs/Comment
	<b>Functionality</b>				<b>Performance</b>			
<b>Ingest to Archive</b>								
DAO Products	38%	100%	100%		100%	100%	100%	8 products working; 13 products in test
MODIS L2 and Higher Products	38%	100%	100%		38%	100%	100%	12 working; 20 waiting on sample products
<b>Production</b>								
PGE 2A	100%	100%	100%		100%	100%	100%	
PGE 71	N/C		100%		N/C		100%	PGE Due to SSI&T from MODIS 11/15/99
<b>Distribution</b>								
Distribute NOAA GDAS to ASTER GDS	100%	100%	100%		100%	100%	100%	
Distribute MODIS L1 Products to LaTIS	100%	100%	100%		100%	100%	100%	
FTP & 8mm Media Distribution (1X)	70%	100%	100%		56%	100%	100%	Limited exercise of 8mm tape distribution
Distribute to MCST	100%	100%	100%		100%	100%	100%	
Distribute to MODAPS	75%	100%	100%		75%	100%	100%	Extended exercise is still required
MODIS L2-L3 to General Users	N/C		100%		N/C		100%	Not checked; testing to be done by 1/1/00
L1A Subset to University of Miami	N/C		100%		N/C		100%	PGE Due to SSI&T from MODIS 11/15/99
<b>QA</b>								
Update L1 QA Flags	100%	100%	100%		10%	100%	100%	Volume Requirements TBD
<b>Fault Recovery</b>								
Extended EDOS, FDD or Larry Server Outages	60%	100%	100%		60%	100%	100%	Testing is in planning phase
Ingest and Distribution of Bad Data	60%	100%	100%		60%	100%	100%	Testing is in planning phase
Data Corruption within Archive	60%	100%	100%		60%	100%	100%	Testing is in planning phase

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## *DAAC Readiness/Operability*

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- Hardware Status
  - All units needed for launch are ready
    - Transition of Archive SILO II into Operations is in Progress
      - Anticipate Completion of Integration and Testing ~11/15/99
    - Browse Archive Being Replaced with New Unit
      - Anticipate Completion of Integration and Testing ~1/00
    - Recent Upgrades to CPUs, RAM, and Buffer Space on Various Machines; Increased Performance, Capability, and System Stability
  - Failover Equipment Status
    - Ingest Failover capability has been tested and is functional
- Spares Status
  - All spares planned for launch are on site

# *Performance*

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- Throughput: Ingest & Processing -
  - Level 1 data processing kept up over extended time period
  - Actually ran faster when sustained
  - Slowed down by workarounds
  - Performance will improve:
    - System will become more automated
    - Performance monitoring will provide information on where to improve system performance

## *Science Software Status and Plans*

- Status of At-launch PGEs

<b>At-Launch PGE</b>	<b>Description</b>	<b>Current Version</b>	<b>Delivery Date</b>	<b>Launch Version</b>	<b>Delivery Date</b>	<b>Comment</b>
PGE01	MOD01 & MOD03	V 2.1.1	5/21/99	V 2.1.1	5/21/99	Launch version is in Ops
PGE02	MOD02	V 2.2.0	7/16/99	V 2.2.0	6/3/99	Launch version is in Ops
PGE-2A	MOD02 subset for	V2.3.0		V2.3.0		Launch version is in Ops
PGE-03	MOD35	V 2.1.0	5/1/99	V 2.4.3	6/17/99	Launch version in test
PGE-71	L1A subset for Miami	V2.0.2	7/7/99	V2.0.2	7/7/99	Launch version in test

# *GES DAAC User Services*

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- MODIS Data Support Team
  - Lead: Greg Leptoukh 301-614-5253
  - Discipline specific science trained data specialists
  
- User Services
  - HELP DESK - 301-614-5224
    - Leena Snoddy
      - Cathy Hughes
        - » Frances Bergmann
  - [daacuso@daac.gsfc.nasa.gov](mailto:daacuso@daac.gsfc.nasa.gov)
  - <http://daac.gsfc.nasa.gov>
  
- Outreach
  - Conferences
  - Literature
  - CDs

# *Terra Position Staff Levels*

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[DAAC Terra Mission(s)]					
Position		02-Dec-99	23-Dec-99	03-Mar-00	Comments
<b>Project Mgmt and Admin</b>		2.0	2.0	2.0	
<b>Prod Ops Prod Ops</b>	Production Supervisor	1.0	1.0	1.0	
	Production Planner	1.0	1.0	1.0	
	Resource Planner	1.0	1.0	1.0	
	Resource Controller	4.5	4.5	4.5	4 on shift/ .5 on days
	Production Monitor	4.5	4.5	4.5	4 on shift/ .5 on days
	Ingest Tech	4.5	4.5	4.5	4 on shift/.5 on days
	Distribution Tech	4.5	4.5	4.5	4 on shift/.5 on days
<b>Engineering Engineering</b>	Engineering Supervisor	1.0	1.0	1.0	
	System Engineer	4.0	4.0	4.0	
	SW Maintenance	4.0	4.0	4.0	
	Test Engineer	3.0	3.0	3.0	
	System Administrator	4.0	4.0	4.0	
	Archive Controller	1.0	1.0	1.0	
	ILS/Maintenance Coordinator	1.0	1.0	1.0	
	DataBase Administrator	3.0	3.0	3.0	
<b>CM</b>	CM Supervisor	1.0	1.0	1.0	
	CM Administrator	2.0	2.0	2.0	
<b>Science &amp;</b>	Sci SW I&T Engineer	6.0	6.0	6.0	4 ECS M&O and 2 V0 Staff
<b>User</b>	Science Data Specialist	6.5	6.5	6.5	4 ECS M&O and 2.5 V0 Staff
<b>Services</b>	User Services Rep	2.0	2.0	2.0	
<b>Total Goddard DAAC Staff</b>		<b>61.5</b>	<b>61.5</b>	<b>61.5</b>	
<b>Operations Coverage: 4 week rotating schedule;</b>		7 day week; 12 hour shifts ( Days/Mids); 4 teams, 4 positions			

# *Training and Certification*

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GSFC AM/DAO Mission				Certification			
	Position	Vendor Training	ECS Training	Skills	12/02/99	12/23/99	3/3/00
Production O	Production Planner	N/A	100%	19	95%	100%	100%
	Resource Planner	N/A	100%	17	50%	80%	100%
	Resource Controller	N/A	75%	18	75%	85%	100%
	Production Monitor	N/A	75%	26	75%	85%	100%
	Ingest Tech	N/A	100%	32	90%	95%	100%
	Distribution Tech	N/A	80%	13	90%	95%	100%
Engineeri	Systems Engineer	100%	N/A	N/A	100%	100%	100%
	Systems Administrator	100%	N/A	N/A	100%	100%	100%
	S/W Maintainer	100%	N/A	N/A	100%	100%	100%
	Database Administrator	100%	N/A	N/A	100%	100%	100%
	Archive Controller	N/A	100%	N/A	100%	100%	100%
	ILS/Maintenance Coordinator	100%	N/A	N/A	100%	100%	100%
CM	CM Administrator	100%	100%	N/A	100%	100%	100%
Sci	SSI&T Engineer	N/A	100%	N/A	100%	100%	100%
	Science Data Specialist	N/A	100%	N/A	100%	100%	100%
	User Services Rep	N/A	100%	17	85%	100%	100%

# *Loose Ends*

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**The following “loose ends” have been assigned workoff leads and dates to be completed:**

## **FTP PULL**

- Finish MCST testing
- Need to establish volumes of data/required/expected from MCST
- How to throttle user requests

## **PATCHES/TE's**

- Set policy for when to install

## **EDG**

- Get valids for launch requirements straight
- Tutoring User Services about EDG and data visibility

## **H/W**

- Resource monitoring

## **QA**

- Metadata publication problem
- Metadata granule deletions

## **• PRODUCTION**

# *Loose Ends*

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**The following “loose ends” have been assigned workoff leads and dates to be completed:**

## **PRODUCTION**

- Fall behind recovery process
- MCST T-3
- Ingest failover
- Long Term production plans

## **ARCHIVE**

- Granule deletion
- AMASS "hangs" and lost data

## **SUBSCRIPTIONS**

- U of Miami I/F testing w/PGE71
- Data distribution strategy

## **I/F**

- Complete testing of ingest from MODAPS

## **PGE**

- Failure procedures to SSI&T

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Distributed Active Archive Center (DAAC)  
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and Distribution

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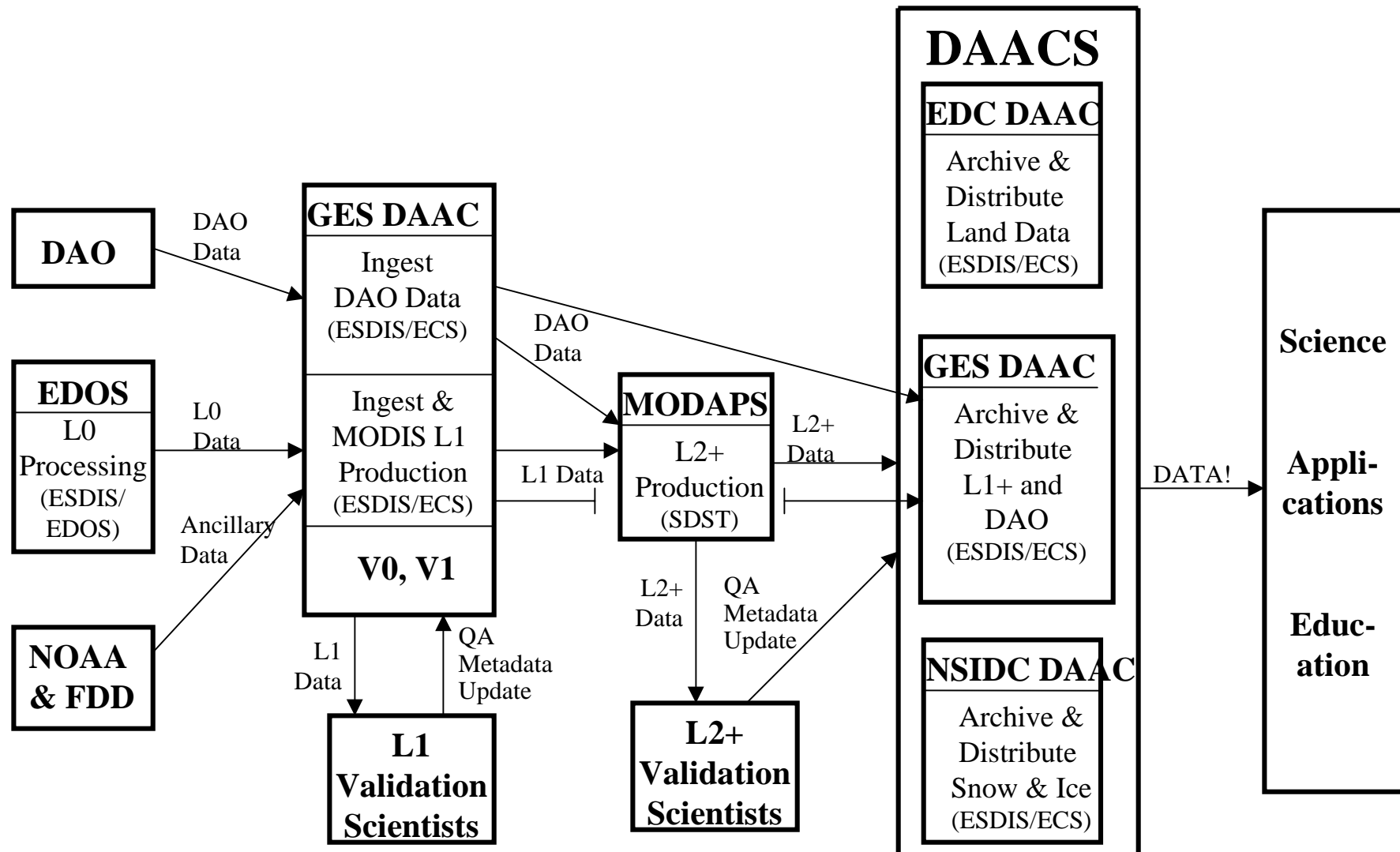
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Distribute MODIS L1 Products to MODIS SCFs	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	100% <input type="checkbox"/>	
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# *Performance*

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- L2/L3 Data Ingest
  - Granule testing has not been completed.
  - Working with MODIS Team to get more test data.
  - Concern about not having been able to test the ingest of the Oceans granules. (Uses multi-ESDT granules).
  - Do not anticipate a problem.
  - SIPS interface is working well.

## *DAAC Science Operations Status Summary*

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	11/10/99	(First Data) 12/23	(Public Access) 3/3/00
DAAC Readiness/Operability			
Staffing and Training			
Science Software Integration and Test			
Documentation			
Logistics			

-  Ready for Science Operations
-  Ready with Workarounds
-  Not Ready

## *Major Issues and Work Plan*

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<b>Issue/Concern</b>	<b>Workoff Plan</b>	<b>Workoff Date</b>
SIPS Interface Delivered; Not Yet Fully Tested	Test Interface and Develop Procedures	15-Nov-99
Incomplete Fault Recovery Procedures	Request Landover engineering and M&O support to work with DAAC operations personnel	15-Dec-99
Facilities Status of Emergency Power and Air Conditioning	Work with GSFC Facilities Management to resolve problems	15-Dec-99